

U.S. Patent Application No. 09/917,435
Attorney Docket No. RD-28615 (07783-0073)

In the Claims

Please amend the claims as set forth below. This listing of claims will replace all prior versions and listings of claims in the Application:

1. (currently amended) A method for developing a web page executable by a web browser, the method comprising the steps of:

opening a visual development environment, wherein the visual development environment

includes a visual representation of the web page under development;

selecting a field from a plurality of field types to be included in the web page;

inserting the selected field into the visual development environment;

customizing a visual appearance of the inserted field using a visual editor of the visual development environment;

customizing dynamic behavior of the inserted field using at least one additional visual

editor of the visual development environment, wherein said step of customizing

dynamic behavior of the inserted field comprises the steps of:

providing a visual editor for defining properties of the inserted field in response to the

selection of at least one particular field type of the plurality of field types;

providing a visual editor for defining error conditions for the inserted field in

response to the selection of at least one particular field type of the plurality of

field types; and

providing a visual editor for defining control operations for the inserted field in

response to the selection of at least one particular field type of the plurality of

field types;

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repeating the steps of selecting a field, inserting the selected field, customizing a visual appearance of the inserted field, and customizing dynamic behavior of the inserted field until all fields are included in the web page; and
generating, in a single file, program code executable by a web browser to implement the visual appearance and dynamic behavior of the selected fields inserted into the visual development environment.

2. (original) The method of claim 1 further comprising the steps of:

incorporating each inserted field into the visual representation of the web page, the incorporating of each inserted field includes incorporating the customizations to the visual appearance of the inserted field and incorporating the customizations to the dynamic behavior of the inserted field; and displaying an updated visual representation of the web page after the step of incorporating each inserted field into the visual representation of the web page.

3. (canceled)

4. (currently amended) The method of claim ~~[[3]]~~ 1 wherein said step of customizing dynamic behavior of the inserted field further comprises the step of defining a plurality of states for the inserted field with the visual editor for defining properties, each state of the plurality of states having a corresponding set of properties for the inserted field.

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5. (currently amended) The method of claim ~~[[3]]~~ 1 wherein said step of customizing dynamic behavior of the inserted field further comprises the steps of:

defining dependencies between the inserted field and other inserted fields with the visual editor for defining control operations; and

defining events for the inserted field and defining corresponding actions for each defined event with the visual editor for defining control operations.

6. (currently amended) The method of claim ~~[[3]]~~ 1 wherein said step of customizing dynamic behavior of the inserted field further comprises the step of defining at least one error condition for the inserted field with the visual editor for defining error conditions.

7. (original) The method of claim 1 wherein said step of customizing a visual appearance of the inserted field further comprises the steps of:

customizing the location of the inserted field in the web page; and

customizing the size of the inserted field in the web page.

8. (original) The method of claim 1 wherein said step of generating program code, in a single file, executable by a web browser comprises the steps of:

instantiating an object for each inserted field, each object being instantiated from a

corresponding field type of the inserted field and including the customizations to the

visual appearance of the inserted field and the customizations to the dynamic

behavior of the inserted field;

providing a control engine to execute each instantiated object; and

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generating at least one of HTML code and JavaScript code to implement each instantiated object, the control engine and the plurality of field types.

9. (currently amended) A system to develop and provide a web application executable by a web browser, the system comprising:

a computer, said computer comprising a storage device and a processor;
an authoring tool, said authoring tool being stored on said computer, said authoring tool being configured for use by an author to generate a web application, said authoring tool comprising a visual development environment to generate a visual appearance and dynamic behavior for fields of said web application and a code generator to generate program code for said web application to implement said generated visual appearance and dynamic behavior of said fields of said web application in a single file executable by a web browser; and

at least one server communicating with said authoring tool, said at least one server comprising means for providing access to said generated program code for said web application to an end-user having a web browser; and

wherein the visual development environment further comprises means for selecting a field from a plurality of field types for inclusion in said web application; and
a plurality of visual editors to customize a visual appearance and dynamic behavior of said selected field, said plurality of visual editors to customize the visual appearance and dynamic behavior of said selected field is dependent on said field type of said selected field, said plurality of visual editors comprising
a visual editor for defining properties of said selected field;

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a visual editor for defining error conditions for said selected field; and

a visual editor for defining control operations for said selected field.

10. (currently amended) The system of claim 9 wherein said visual development environment further comprises:

means for displaying a representation of a current state of said web application;

means for selecting a field from a plurality of field types for inclusion in said web application; and

~~a plurality of visual editors to customize a visual appearance and dynamic behavior of said selected field; said plurality of visual editors to customize the visual appearance and dynamic behavior of said selected field is dependent on said field type of said selected field.~~

11. (original) The system of claim 10 further comprising means for incorporating each selected field customized with said plurality of visual editors into said representation of said web application displayed by said means for displaying.

12. (canceled)

13. (currently amended) The system of claim [[12]] 9 wherein:

said visual editor for defining properties of said selected field comprises means for defining a plurality of states for said selected field, each state of said plurality of states has a corresponding set of properties for said selected field;

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said visual editor for defining control operation for said selected field comprises:

means for defining dependencies between said selected field and other selected fields;

means for defining events for said selected field; and

means for defining corresponding actions for each defined event; and

said visual editor for defining error conditions for said selected field comprises means for defining at least one error condition for said selected field.

14. (original) The system of claim 10 further comprising a visual editor to define display characteristics of said selected field, said visual editor to define display characteristics comprises means for defining a location of said selected field in said web application and means for defining a size of said selected field in said web application.

15. (original) The system of claim 10 further comprising:

means for instantiating an object for each selected field, each object being instantiated from a corresponding field type of said selected field and including said customizations to said visual appearance and said dynamic behavior of said selected field;

a control engine to execute each instantiated object; and

means for generating at least one of HTML code and JavaScript code to implement each instantiated object, the control engine and the plurality of field types.

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16. (original) A computer program product embodied on a computer readable medium and executable by a computer for developing an input form executable by a web browser, the computer program product comprising computer instructions for executing the steps of:

- providing a visual development environment, wherein the visual development environment includes a visual display of an input form representing a current state of the input form;
- selecting an input field from a plurality of input field types;
- customizing a visual appearance of the selected input field using a visual editor of the visual development environment;
- customizing dynamic behavior of the selected input field using at least one additional visual editor of the visual development environment;
- incorporating the customized selected input field into the visual display of the input form in the visual development environment;
- repeating the steps of selecting an input field, customizing a visual appearance of the selected input field, customizing dynamic behavior of the selected field, and incorporating the customized selected input field until all input fields are included in the input form; and
- generating, in a single file, program code for the input form executable by a web browser to implement the visual appearance and dynamic behavior of the selected input fields of the input form.

17. (original) The computer program product of claim 16 wherein said step of customizing dynamic behavior of the selected input field comprises at least one of the steps of:

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defining a plurality of states for the selected input field, each state of the plurality of states having a corresponding set of properties for the selected input field;
defining dependencies between the selected input field and other selected input fields with a visual editor for defining control operations;
defining events for the selected input field and
defining corresponding actions for the defined events; and defining at least one error condition for the selected input field.

18. (original) The computer program product of claim 16 wherein said step of customizing a visual appearance of the selected input field further comprises the steps of:

customizing the location of the inserted field in the input form; and
customizing the size of the inserted field in the input form.

19. (original) The computer program product of claim 16 further comprising computer instructions to implement the steps of:

instantiating an object for each selected input field, each object being instantiated from a corresponding field type of the selected input field, each instantiated object controlling the visual appearance and the dynamic behavior of the selected input field, and each instantiated object having information for generating program code executable by a web browser to implement the instantiated object;
incorporating into the instantiated object for the selected input field the customizations to the visual appearance of the selected input field;

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incorporating into the instantiated object for the selected input field customizations to the dynamic behavior of the selected input field; and
providing a control engine to execute instantiated objects.

20. (original) The computer program product of claim 19 wherein the step of generating, in a single file, program code for the input form executable by a web browser to implement the visual appearance and dynamic behavior of the selected input fields of the input form further comprises the step of generating at least one of HTML code and JavaScript code to implement each instantiated object, the control engine and the plurality of field types.